THESIS.

APPENDICITIS.

A Plea For Early Operation.

By

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A P P E N D I C I T I S

A PLEA FOR EARLY OPERATION

The subject of Appendicitis has no doubt received more attention both from the medical profession and the general public than any other medical subject. It has been boomed all over the world - the Americans have perhaps been foremost in popularising this disease - one hears of "Appendicitis Dinners" given by certain wealthy Americans, where only those who have been operated upon are invited. The general public are inclined today to imagine that

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we have carried it too far and that in the majority of cases quite unnecessary operations are performed. No doubt we are bound to admit that there have been cases where certain surgeons have made capital out of the operation and have only too readily blamed the appendix for every evil in the abdomen, where in their ignorance they were unable to ascribe the cause and have insisted upon its removal, more particularly amongst the wealthier classes where alluring fees are in sight. Such a term as " Appendicular colic " will always cover the removal of a normal appendix. Apart from such cases of wanton unscrupulousness, no surgeon can be blamed for removing a normal appendix if

if he conscientiously believed it to be the cause of trouble after a most careful and thorough examination.

The more one sees of the disease and its very treacherous nature, the more one feels that too firm a stand cannot be taken to make the profession realize that every case of genuine appendicitis is a source of the very gravest danger to a patient and, with the proper facilities at hand, the sooner that appendix is removed the better both for the patient and for the peace of mind of the medical man in attendance. What has hitherto hampered the general practitioner more than anything is the doctrine of the so-called " interval operation."

operation." He is called to a case and goes on attending daily and always hopes that the attack may not go further than the inflammatory stage and consoles himself with the belief that he is doing the right thing by waiting for the interval. Over and over again it happens that when the gravity of the case dawns upon him, perforation and general peritonitis have set in and his patient dies. His position is, in most cases, made even more false by the friends of the patient - a case will illustrate my point : A young man of 22, the only son of a fairly wealthy Jew in this town was seized with an attack of pain in the abdomen, the usual remedies were

were ordered by the family doctor; as the boy did not improve a surgeon was called in; he advised operation, but this the family would not consent to and they insisted upon calling in a third doctor. The acute symptoms had abated, as they often do when pus forms, and No. 3 thought there was certainly no urgency about the matter; that night the boy became very much worse and, before a fresh decision could be come to, he died. Of course the parents today blame all these doctors for not operating in time to save their child's life.

The fact that many patients get over their inflammatory attacks has hitherto impressed the profession very forcibly, and

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in the absence of any grave symptoms we seldom realise the mischief that may be going on inside, and we stand unblushingly by and allow the patient to slip through our fingers; we are so afraid to get the reputation among our patients of being " too fond of the knife ". If we insist on an immediate operation, fearing the worst change inside, and are refused permission and the case clears up, we are of course blamed for advising what was to the patient's mind a quite unnecessary operation; yet this consideration should never deter us from insisting upon immediate operation if facilities are at hand, for once an attack of appendicitis has occurred the appendix must

must ever afterwards be regarded as abnormal and given the ideal conditions for operation i.e. a competent surgeon and proper technique the sooner that appendix is removed the better. To illustrate this I will recite another case in my own practice - A young man aged 26 was seized with very severe colic at night. I saw him the following morning, his temperature was 102°F and pulse 90, pain was spasmodic and spread over lower half of the abdomen, it required a very long and careful examination to make out that the pain was rather more severe on the right side than on the left. He had been seen by another doctor the previous night (in my absence from home) who had ordered

ordered castor oil and hot fomentations and he expressed himself a shade better than the previous evening. I advised him to go into hospital at once for operation; as it was just before Christmas time he would not consent and on the following day he was much improved, although tenderness now still remained on pressure over the site of the appendix; this gradually diminished day after day and he was soon about again. I explained the risk he ran with a disgraced appendix and he consented to undergo operation in January. When the time arrived he made the excuse that he could not afford the time to lay up and as he felt perfectly well there was no use bothering.

bothering. On the 20th of April he had a sudden return of all his symptoms and I insisted upon an immediate operation; this he refused and assured me that he would get over it just as he did before. I saw him again the following morning and he was no better but still refused operation, his temperature was only about 100°F and pulse 90 but I feared the worst and ordered the ambulance to fetch him, nolens volens, and had him removed to a private hospital. On opening the abdomen and drawing aside the omentum, the smell was overpowering, the omentum had become attached to the point of the appendix, and on this separating a gangrenous stinking patch appeared about the

size

size of a sixpenny piece on the surface of the omentum and on the corresponding point of appendix, the infected piece of the omentum was ligatured off and removed and the appendix excised, the parts were washed with a weak lysol solution and packed with iodiform gauze and drained. He made an uninterrupted recovery. On examination, no pus was discovered in the appendix and no concretions. The mucous membrane only appeared swollen. This case will serve to illustrate the difficulties one is faced with through the prejudice to operation and the fond belief, which often the medical attendant shares, that the chances are always in favor of the inflammatory attack

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in the appendix clearing up without giving further trouble.

The greatest difficulty that faces the profession in regard to this very treacherous disease, is the fact that most practitioners look for more grave disturbance of pulse and temperature before they will suspect that very active and poisonous trouble is going on within that little organ. The fact is, that one really never can be sure however mild an attack may appear, that very active and dangerous mischief is not going on. We know that the omentum and peritonium around try to do their best and embrace that poisonous little

organ

organ to keep it from its merciless actions and help to wall off the pestilential area, but as often as not they fail and a sudden perforation, before a proper defensive zone has had time to be set up, starts a general septic peritonitis and the patient dies, in the majority of cases, in spite of a belated operation.

The activity of any individual practitioner in attacking this disease is nearly always dependent upon, and always in proportion to, his own personal and often very bitter experience. He may read of cases galore, and unfortunately it is the successful case that is usually reported, but until he feels he has made an ass of himself

self over some particular case, he does not as a rule take the lesson to heart.

My first case in practice was that of a fellow graduate who had an attack in London in December 1895, we had graduated together in Edinburgh and were then studying in London. I gave him hypodermics of morphia, and spent nearly the whole night applying hot laudanum stupes as hot as he could bear them, changing them every ten minutes. This very active treatment relieved him and he was soon about again. As he was soon going to start practice in the then Orange Free State, where he would be the only practitioner for miles around, I strongly advised him to go up

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to Edinburgh and have that possible future source of danger to his life removed; this he very pluckily did, and was operated upon successfully by Mr. Caird. Starting with that experience and hearing a great deal at the time about " interval operations " I quite failed to realise the grave danger of perforation or gangrene during any attack however mild it may appear. My next case was that of a young farmer residing about three hours' journey from Queen's Town, Cape Colony. I prescribed mag. sulph. and quinine in small repeated doses and hot fomentations as before and the case cleared up completely. Can it be wondered at that I took up a similar attitude in an apparently

apparently mild third case which occurred in Beira, on the East coast of Africa?; and this poor fellow suddenly died, before I half realised how bad he really was. I made a post mortem examination on this man and was shocked to find his appendix perforated and evidence of general septic peritonitis, although from all accounts he had not been ill for more than three or four days. This case taught me my lesson and determined me to try and forget all about so-called " interval operations " in the face of any actual attack.

To wait in any case for the problematical walling off of an infected appendix and localised abscess formation, is

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to my mind positively homicidal; we can never be sure that the appendix is not distended with pus and that it may not burst at any moment into the general peritonial cavity and set up rapidly fatal septic peritonitis. Not long ago I was called to see a boy aged 21; he had been acting as referee on the football field and was suddenly seized with pain in the right iliac region; he went to bed and vomited at intervals of three hours the whole night. Very hot fomentations were applied without any benefit. The following morning I was sent for - at about 11 a.m. - his temperature was normal and his pulse 80 per minute, he had very great tenderness

tenderness over site of appendix. I made a rectal examination and found that he was exquisitely tender on right side of pelvis, the least touch causing excruciating pain. I sent him to hospital at once and operated at 5 p.m.; the abdomen was opened by an incision parallel to Paupart's ligament over site of appendix. As soon as the peritonium was slit up, a sausage-like appendix at once presented itself; it was very distended with pus and seemed on the point of bursting. The omentum was attached to the appendix and became detached while endeavouring to ligature it off in that situation, no pus had escaped and there was no gangrenous area or any sign of localised peritonitis

peritonitis around the parts. The omentum appearing to have a natural affinity for a part that had become a grave danger to life. The appendix had a very well-developed and broad mesentry and after ligaturing this off at its base, I removed the appendix. I simply applied two ligatures as near as possible to the caecum and divided between them, touched the orifice on stump with a drop of pure carbolic and then put in a purse-string Lembert suture around base of stump and drew it firmly together, completely inverting the stump. The wound was closed completely in all its layers and by the tenth day the boy was fit to leave hospital for his own home.

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On examination, the appendix was found distended with pus and contained an oval concretion the size of a bean, which on cross-section resembled a phosphatic calculus.

In some cases one only sees the patient after three or four days have elapsed; here there may have been a history of an improved condition from the first onset of symptoms and the practitioner often believes, with the relatives, that all is going well, whereas, the very reverse is the case. A drop in temperature and a normal pulse with tenderness still marked, as often as not, means formation of abscess, as the following two cases will illustrate.- On September the 8th, 1905, I was called

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to see a boy aged 19, in consultation with another practitioner; temperature was 100°F and pulse 84 per minute. This boy had been ill for four days and I was told that his temperature had been as high as 104°F and that as a matter of fact he was very much improved. I made a rectal examination and discovered that there was still exquisite tenderness on right side. Fearing grave mischief, I recommended immediate operation. The family physician called me an alarmist and as I did not wish to cause any unpleasantness, I agreed to wait until 9 a.m. the following morning, very much against my own wish. Next morning I was telephoned for, and as the fair

reason

reason was given that my colleague was called to the country and would not return for some hours, I consented to go and see the patient again. I found him no better, although certainly no worse. As however I had definitely made up my mind that delay was extremely dangerous, I had him removed to hospital and prepared for operation. Fortunately my colleague returned in time for the operation and we undertook it together. We found a huge abscess, with the appendix lying at the bottom of it completely gangrenous, and it came away on picking it up with a pair of forceps and somewhat resembled the washed-out finger of a chamois leather glove. The cavity was cleaned

cleaned and packed with iodiform gauze and drained. He made an uninterrupted recovery. A less fortunate case occurred to my next-door neighbour, which, he assures me has taught him a life-long lesson. I cannot help feeling a sense of blame as well for the death of this boy. A chemist rang up at 1 a.m. asking me to see a patient, a boy of 17, who had been ill the whole of the previous day with pain in the stomach and vomiting. The mother of the boy had come to him the previous morning and got some bismuth powders to stop the vomiting! I referred him to my neighbour, who attended him and gave me these few notes on the case. He prescribed

prescribed chlorodyne and belladonna and hot fomentations, saw him again at 9 a.m. and found him very much improved; temperature which had been about 101 was now 99.6 and pulse was normal. He was apparently so much better that it was not thought necessary to see him again that day. At 3 a.m. the following morning he was again telephoned for, found that pain had become much aggravated and pulse more rapid and temperature higher, he repeated treatment of previous night and called another doctor in consultation at 8 a.m. The patient was then removed to hospital and the operation was not performed until 2.30 p.m. The appendix was found to be gangrenous and general septic

septic peritonitis had set in, he was freely drained but he died that same night. This practitioner was deluded by the improvement in symptoms a few hours after first seeing the patient, and there was undue delay at every turn that was taken. The symptoms were every bit as grave as those of a strangulated hernia, and had it been a case of this nature, neither the breakfast nor luncheon hours, nor any pressure of visits, would have prevented an immediate operation. The surgeon who was called in consultation, is a splendid man in every way, a man of very large experience and a most kindly disposition, and I am convinced if he saw that same boy drowning,

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he would risk his own life to save him. Yet here the truth was staring him in the face, and yet he could not realise it. One naturally enquires - " Why is it that we dare be guilty of such criminal delay " ? The question of our fees surely cannot make the difference. None of us would see a poor beggar drowning and stroll off quietly to breakfast or dinner and then return later, deliberately undress, and then see if we cannot save him. The only possible explanation is, that we as a profession get into the habit of making haste very slowly and will not realise truths until they have been drummed into our heads, or until they have been brought home

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to us in the case of some one who may be nearest and dearest to us.

There is probably no bodily disease where more prompt action is required and, in spite of all that has been written on this subject during the past twenty years, we are still able, like Nero, to sit by and fiddle while Rome is burning.

Once having noticed grave symptoms such as quickened pulse rate and increased temperature, especially after a period of apparent improvement, there is positively no excuse for any delay and no time should be wasted in waiting for a consultation if the consultatant cannot see the patient at once. If no hospital is at hand, a suitable

suitable nurse should be employed and all preparation at once made for immediate operation. With regard to cases seen immediately after the onset of first symptoms, if every facility is at hand or near at hand for operation, there can be no possible reason, other things being equal, why one should wait for acute symptoms to subside, for I do not believe such delay makes the operation any safer and I would go even further and state, that by the time subjective or objective symptoms appear, the system has already called forth its army of leucocytes and opsonins to defend itself against an invasion of poison, and with modern more perfect asepsis, we do not in

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any way add to that poison, and even if by accident we did introduce some germs, the system would be in a better position with its forces already arrayed and ready, than it would be when no inflammatory condition is present. The operation comes as a great and immediate relief to such a patient and recovery is quite as prompt and, if as is sometimes the case, the very first symptoms are caused by a perforation, we will feel all the more pleased that we did not, in our justifiable ignorance, waste valuable time with injections of morphia and hot fomentations, measures, which are no doubt very valuable in simple inflammatory conditions or in so-called " catarrhal appendicitis ",

appendicitis ", if we can only be sure, that such is the only trouble present.

In the majority of cases the diagnosis is not difficult but owing to the very treacherous nature of the disease, as proved in the cases I have quoted, we are quite at a loss to express a definite opinion as to the probable outcome, for experience has proved to us that a mild attack which is apparently subsiding may develop symptoms of the very gravest significance, while, in other cases, the most alarming symptoms may be followed by a speedy recovery. We must always be in a state of uneasiness and apprehension , even with the mildest of attacks, and to wait day after day, is rather

rather like trusting to luck or to Providence to help us out of the difficulty; and if there is every facility at hand, why wait? what is there to wait for?. Truly, recovery can and often does take place but it certainly is very apt to recur, and perhaps then under most unfortunate and unfavourable surroundings and conditions; and in any case, such an appendix can never be looked upon as a normal organ again. An enquiry into the history of the case and of the prevailing symptoms, will assist us to determine whether the attack is <u>acute</u> or <u>chronic</u>, and in most cases it may be possible to determine the presence of or absence of abscess formation,

or

or of a diffuse or generalised peritonitis, but unfortunately, there is no particular combination of symptoms which can assist us to determine the exact amount of trouble brewing, or whether a perforation is impending, or whether a purulant peri-appendicitis is being successfully walled in.

We seldom see cases at the very outset of the attack, the ordinary stomach-ache and acute colic are so common, that the doctor is usually not sent for, it is only after castor oil and the hot-water bottle have been tried in vain, that relations and friends become alarmed and the medical man is called in.

Of all the symptoms, pain is no doubt

doubt the most constant; at first it is very indefinite, but soon becomes more pronounced in the right iliac fossa, and with this there is a very well-marked muscular resistance and rigidity over the site of the appendix. On examining the patient by palpation, there is always marked tenderness in this region and the least pressure causes a very marked rigidity of the abdominal muscles. A vaginal examination in the married female, and a rectal examination in the virgin and male, should never be omitted, as it is the source of most valuable information and very often serves to make the diagnosis doubly certain. We always use the thermometer to test the systemic

systemic disturbance; this is very often most misleading, as I have previously pointed out, and we should be very wary of attaching much value to a slight or normal temperature. Of course taken with other symptoms, it may be of value as showing the progress of the infection; it seldom rises above 103°F and more often not above 100°F. When we examine the pulse, we have a far more reliable guide than the temperature, but here again we must be careful not to be misled, for as in case No. 3, we may have a normal pulse and yet the appendix may be distended with pus and on the point of perforating, indeed it very often happens that the pulse may be accelerated at the commencement

commencement of the attack and when the affection becomes localised and pus forms, the pulse becomes normal. If later it again becomes accelerated, we must look upon it as a sign of the very gravest moment, for it spells commencing peritonitis. It is now usually rapid full and of high tension, but as the condition becomes more septic, it becomes more rapid, weak and irregular.

Vomiting nearly always occurs at the commencement of an attack, but does not as a rule continue for more than perhaps the first few hours; when it persists, even at some hours' interval, it must be regarded as a sign of the very gravest

significance

significance.

The above are to my mind the most out-standing features of a typical attack; of course there are exceptional cases where all or any of them may be wanting; the more experienced amongst us will often be guided by the general impression we receive at the first sight of the patient, and to any change in his general constitutional condition. In a certain few cases the symptoms may be quite atypical. On the 25th of September 1899, just before the War, I was called to see a young German aged 26, who was in charge of the book-stall at Park Station, he complained of colicky pains in the abdomen and of great

pain

pain on micturition, especially at the end of the act, his temperature was 100°F and pulse about 90, was very tender all over the lower part of the abdomen; the rectal examination decided me in favour of a diagnosis of appendicitis; pain was intense on making traction on the bladder. I had him removed to hospital the next day as his symptoms had not improved. On opening the abdomen I found the appendix was inflamed and its tip was adherent to the fundus of the bladder. In another case, that of a nurse aged 30, there was chronic abdominal pain and no undue tenderness over the right iliac fossa, the pain was perhaps more marked in the right hypochondrium

htpochondrium. An exploratory laparotomy was performed in this case and a very long appendix was found, its tip was adherent to rib behind hepatic flexure of the colon. In women one often finds disease of the adnexa complicated with trouble in the appendix, and here the symptoms may be quite obscured by the pelvic trouble, as in the following instance:- A young virgin, aged 22, who was operated upon for an ovarian cyst, in this case, all the symptoms were referred to the right pelvic region; here the cyst was found to contain a dark offensive fluid and was evidently infected from a suppurating appendix which was adherent to it. On examination this

this fluid was found to contain the bacillus coli. In another instance, a man, aged 35, all the symptoms pointed to obstruction, for which a laparotomy was performed, the appendix was inflamed, contained a concretion, and its tip was adherent to the ilium, causing stricture and kinking; here there was a distinct history of a previous attack.

A troublesome symptom in almost all cases, is constipation, this may be so marked as to lead one to suspect possible complete obstruction; it is often too readily aggravated by the usual injections of morphia, given to relieve the first acute symptoms. If this (constipation) is not relieved at once, it may readily lead to

ilius,

ilius, with its characteristic symptoms of constant vomiting, which afterwards becomes stercoraceous, and non-passage of either faeces or flatus, the abdomen becoming distended and acutely tender.

In certain doubtful cases, where there is constipation amounting to possible obstruction and vomiting, it is positively sinful to relieve pain with morphia, this also relieves the vomiting, pleases the patient no doubt, but is often the last straw in the development of complete obstruction.
I was called to see an old gentleman last year, he had pain in the lower abdomen, vomiting occasionally, and was if anything

more

more tender over the region of appendix. I ordered enemas, as his bowels were very constipated; the first result was not very satisfactory, although it gave him considerable relief; I was called out of town to a case, and during my absence, the symptoms became worse again; another medical man was sent for, and at once injected morphia, and of course relieved the patient of all pain and vomiting; when I returned to see him, he told me what had happened, and expressed himself as so pleased with the other doctor's treatment, he really felt so much better, and thought he would prefer that gentleman to attend him; I warned him there and then that morphia was a very

dangerous

dangerous drug in such cases, and only served to hide all symptoms, and where there is a possibility of obstruction, it can only make matters worse; however, I had to give up the case. Three days afterwards this man died; morphia had been continued for another two days, and then only operation was resorted to, when his condition was quite hopeless. The appendix was found inflamed, there were recent adhesions, and the bowel was constricted by a fold of omentum lying over it, and adherent to the brim of pelvis. Had morphia not been given in this case, the symptoms would not have been obscured, and operation would have been forced on the medical attendant,

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at least two days before, and the patient's life would most assuredly have been saved; of course once operation has been decided upon, morphia may be given with the greatest advantage.

My personal experience of these and many other cases, extending now over a period of some twelve years, has forced me to the conclusion that the ideal we should aim at is, to regard even the initial attack of appendicitis as the outward manifestation of an already diseased condition, however mild the attack may appear, and under proper surgical conditions, to remove that appendix as soon as possible. My reasons I would sum up as follows:-

1.

1. Even in the mildest attacks, the so-called " catarrhal appendicitis ", which may be so slight, that the doctor is not called in, here the columnar epithelium lining the tubular glands, which is a single layer on the mucous membrane, is shed and as a result germs may now more readily penetrate and invade the deepest structures and cause infection; like the tonsil, the appendix is very rich in lymphoid tissue, and is very suseptible to inflammatory changes. It is probably as the result of such mild attacks, that the nucleus is started for the formation of one or more concretions, and these we know play an important rôle in some of the gravest attacks. At this

stage

stage of course, the patient would not consent to operation, even if we were foolish enough to urge it, except where such attacks become frequent, and probably as the result of a concretion forming, give rise to repeated attacks of appendicular colic, or where the appendix is clearly a factor in the production of, or is helping to keep up other trouble, such as muco-membranous colitis as proved by Deaver (Treatment of Appendicitis 1896) and Schoemacher (Annals of Surgery 1898).

2. In the severer forms, where as a result of the infection which has occurred, the mucous and sub-mucous coats are damaged and ulcers are formed; here, although truly the attack may pass off, it means

means that scar tissue forms and often causes stenosis of its orifice or other portion of the canal, with consequent retention of secretions, forming a favourable nidus for increased bacterial growth. In these cases, we as a rule get all the symptoms of a typical acute attack, and although it may be argued that a fair percentage recover completely, in view of the fact that suppurative cases occur most frequently in first attacks, and that even when suppuration does not occur, the damaged appendix is always more liable to subsequent attacks, such cases should be operated upon as soon as diagnosed.

3. It is far safer to attack the appendix while it is still lying free, and even

even at this time there may be sudden perforation. The adhesions, if any, are very slight and easily separated, and the operation can be performed in much less time.

4. By waiting, we often find dense adhesions formed and peri-appendicular abscesses, and unless the appendix can be readily found and removed, we dare not separate matted intestines and break down adhesions in search of it, for fear of spreading infection and we are compelled to leave the appendix, which means, with rare exceptions, a persistence of all the trouble and often the patient is left with a troublesome sinus. The drainage necessary in these cases, often extending

extending over several weeks, leaves a weak scar and predisposes to hernia.

5. As the result of a single inflammatory attack, the appendix may become adherent to any part in its vicinity, and either by traction or by forming a loop, may be the cause of intestinal obstruction as in case XII quoted.

6. In the Colonies, where these operations are often not performed by highly expert surgeons, they stand the chance of doing less harm while the disease is limited to the appendix and no proper adhesions have been formed, than in " abscess cases " where the parts are often clumsily handled or even in " interval cases ",

where

where a prolonged search is made for the appendix through dense adhesions. Such a case I can recall to my mind, that of a young lady of 22, who was under chloroform for over two hours while the enterprising surgeon was deliberately picking and dissecting all to no purpose - she died.

7. We spare the patient a great deal of prolonged suffering and anxiety, and have instead a brief surgical illness with rapid recovery, for drainage is not necessary in these cases, with rare exceptions, and here not for more than a day or two.

8. The liability to subsequent attacks is obviated, and there is never any question of a subsequent operation.

9.

9. Abscess cases often give rise to such complications as general peritonitis, pylephlebitis, empyema, pleurisy, pneumonia, sub-phrenic abscess, and faecal fistula; the mortality is highest in these cases, and they are to be avoided at all costs.

Where we do not see the patient until say two or more days have elapsed since the initial attack, here I would waive all considerations, and operate with hasty preparation in cases showing alarming symptoms, and with perhaps a little more deliberation in less alarming cases, only to insure a more perfect technique, but from no other consideration, for there are quite a few cases (as quoted), where there

there may be complete disappearance of most of the symptoms, and yet during the period of their subsidence the diseased process has gone on steadily.

If a peri-appendicular abscess is opened, and the appendix cannot be readily got at, no attempt should be made to separate adhesions in search of it. The parts should be at once packed with iodiform gauze and drained and the attempt may later be made to remove the appendix, in the absence of all pus; for we run the risk of spreading the infection and setting up a general peritonitis.

In cases where all symptoms have completely cleared up, and the patient is about

about again when we see him, there is no reason for such urgency, but the reason for operation remains the same, and we may now spend more time in preparing the patient for operation.

To my mind a single attack of appendicitis <u>does</u> ipso facto condemn a patient to operation. In an article by Arthur H. Burgess entitled "One Years Work in Acute Appendicitis" (B.M.J. July 13th 1907 Page 71) the writer asks the question :- " Is the patient to receive no reward for having successfully braved the storm ?" and says:- "I venture to think that were the holders of this view to fully explain to their patients in the early period of their first attack, that they

they would in any case now have to submit to operation, the majority if not all would wish the operation to be undertaken at once". It is a pity the writer does not hold this view (that a single attack <u>does</u> ipso facto condemn a patient to operation) for it is the very argument which would tend to act as a lever in attaining his ideal as it is mine of early operations. I am in perfect agreement with him in his remarks and arguments in favour of early operations, and also with regard to the attitude we should take up in abscess cases. With reference to his remarks under the heading "Diffuse spreading peritonitis " viz:- "One often hears it said that operation between

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the second and fifth days is more dangerous than at other times, because of the absence of adhesions walling off the infected area " I quite agree with him that "such is not the case" and " that delay merely increases the general toxaemia and lessens the chance of recovery". I think that this " second to fifth day " doctrine of delay, is as harmful as the " interval operation " picture, which the profession has been tempted to look forward to, and is often the cause of the unfortunate condition we find patients in, when surgical interference is called for; it may not make much difference in the case of expert surgeons who have such cases under their close personal supervision in hospital,

but

but to the average general practitioner who after all usually sees these cases first, it affords a useful excuse for dilly-dallying and for neglecting to call in a surgeon in good time. I would like to know whether those surgeons who advocate waiting until the fifth day, would have dared to do so had they been responsible for the operation on His Majesty King Edward, when he was an " abscess case ", and well might Sir Frederick Treves lay down as a rule that " immediate operation is demanded in every example in which there is reasonable suspicion that suppuration has taken place " (B.M.J. June 28th 1902).

The feeling amongst the vast major-

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majority of practitioners, is to wait in all cases where they are called in, in the initial stage, and to treat with hot fomentations, ice, morphia, calomel, mag., sulph., castor oil, enemas or whatever the particular fancy may be, and they would look to surgical interference as a last resource. It is this attitude amongst the general practitioners which I consider such a pernicious one, and would like to see completely reversed, i.e. to look upon the disease as a purely surgical affection, and let the exception be the responsibility of risking a sudden perforation, which in all cases, should rest with the patient, his relations, or friends, when operation is refused.

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It was Willard Parker, of New York, who in 1867, just 40 years ago, laid down what I have termed the " second to fifth day " doctrine of delay. Ref. ("An Operation for Disease of Appendicitis vermiformis ceci " New York Med. Rec. 1867 Vol.11, Page 25 " .) In this year he published four cases, in which he had treated abscess in the right iliac fossa consequent on inflammation of the appendix, by incision and evacuation. In his first case, which occurred 20 years before (1847), he waited for fluctuation, but soon recognised that an earlier incision would be more desirable, and this he was the first to point out. He writes:- " To be successful, it is necessary that

it

it (the incision) should be made neither too early nor too late, not before adhesions are fully formed, nor after a short period before a maximum formation of pus has been reached, that is, the incision should be made after the fifth day, and before the twelfth" - and again - " One other question remains - Would the operation bring about a cure? Judging from the cases reported above, an affirmative answer seems certain, for these recovered, because in each one nature had provided for an external discharge of the contents, and what nature provided in these three cases, an operation would provide in all cases ". All credit is due to this old pioneer for pointing

pointing the way which thousands have since followed, and for encouraging surgeons to use the knife in these cases. It was singularly fortunate, that just about this time (a year later 1868), Sir Joseph Lister discovered the principle of anti-sepsis and introduced it into surgical practice; this paved the way to the enormous success which has attended these operations.

To Reginald Fitz of Boston, must be given the credit of first pointing out (in 1886) that surgical interference should be employed at a much earlier date than was the custom. Parker recommended the fifth day as the earliest, but Fitz in a table of 60 cases showed, that 35 per cent died during

during the first five days. He writes:-

" It is thus evident that the earliest date fixed by Dr. Parker is too late to afford the possibility of relief in more than one-fourth of all the cases, hence, if the indications for operating justified the election of a date as early as the fifth day, they still more justify the choice of the third day. The result has shown the wisdom of the former step and the evidence here presented seems not only to warrant, but to demand the latter. It is evident that the operation to be performed is that of opening the abdominal cavity. It is therefore unnecessary to state that an act which twenty years ago, might have added to the

risk

risk of the patient, may at the present time when properly performed, be confidently expected to reduce them materially. Fitz very clearly elucidated the relations of the appendix to various misunderstood abdominal diseases, and gave a great stimulus to more aggressive methods in dealing with this disease.

Kronlein of Germany is entitled to the distinction of first removing the appendix (1884) and published the account in 1886 (Uber die operative behandlung dir acuten diffusen jauchtig - eitrigen peritonitis. Arch. f. klin. chir. 1886 Bd. 33 Page 507). From this time onwards eminent surgeons in different countries, fortified with the knowledge and

and use of anti-septic principles, had the courage to boldly open the peritonium and attack the appendix. The first in England being Sir Frederick Treves , 16th Feb. 1887 and published in 1888; the first in America, Thomas G. Morton 27th of April 1887, published in the same year.

N. Senn was a strong advocate for early laparotomy, he wrote - " It is of the greatest practical importance to recognise the exact condition in time, and to anticipate the dangerous and often only too often fatal complications, by removing permanently the source of danger, which can be done at this time with comparative ease and almost perfect safety, by the extirpation of

the

the appendix " (Ref. " A Plea in favour of early laparotomy for catarrhal and ulcerative appendicitis with the Report of Two Cases " Journal Amer. Med. Assoc. Nov. 2nd 1889).

C. McBurney in the same year helped in a great measure to clear the atmosphere of confusion which had arisen, through the use of many vague terms in describing the disease around the caecum, and adopted the term "Appendicitis " once and for all, as being the most correct one, the appendix being the primary source of all the trouble with very rare exceptions. The terms typhlitis and peri-typhlitis continued to be used in describing the disease in England, and created a great deal of confusion in the

the minds of the profession. At this time surgeons began to attack the appendix and to insist upon its removal. In the " Lancet " Feb. 9th 1899, Page 165, Treves pointed out that " An offending appendix may be removed, or a deformity of it corrected with the happiest results in cases of relapsing typhlitis. " The operation performed in the quiescent period after subsidence of inflammatory and other symptoms, has prevented further relapse and possibly averted a fatal perforative peritonitis." This then became a recognised operation, and the journals were soon inundated with records of successful operations both in America and Great Britain. In the " Lancet " for

June

June 1894, Mayo Robson reported a series of nine cases of recurrent appendicitis operated upon successfully in the quiescent period, each case having numerous attacks and he remarks: " In such cases there are clearly three courses which may be pursued."

1. Non-operative, trusting to rest, and diet with opium if required in order to bring about resolution in the hope that the existing attack may be the last.

2. Operation on the second or third day of the seizure as advised by Dr. F.S.Dennis and other American surgeons, who discourage the removal of the appendix between the attacks on the chance that there may be no recurrence.

3.

3. Operation in the quiescent period between the seizures."

He states, that he decidedly prefers the third of these courses, if opportunity be given to choose the time, and he gives the following reasons:-

1. The patient is likely to be in the best possible condition.

2. There is less likelihood of there being an extensive collection of inflammatory products in or in the neighbourhood of the appendix, and therefore there will be less danger of soiling the peritoneal cavity and less fear of peritonitis.

3. An operation in the quiescent period seldom requires drainage and therefore the

the wound can be made secure and there will be less likelihood of hernia following operation.

4. The appendix can be dealt with in a more satisfactory manner than when it is acutely inflamed and hidden by greatly distended intestines.

With most of this we will no doubt agree, when we are consulted in the quiescent stage, but in the face of an actual attack, the doctrine of waiting for that ideal time and choosing course No. 1 is, what has done all the mischief out here in South Africa at any rate, and accounts for the high death rate in these cases.

In marked contrast to the above,

Mr.

Mr.A.Worcester, of Waltham Mass. U.S.A. two years before this, (Ref. Ann. of Gyn. and Pediate) (May 1892) insisted upon immediate operation in all cases, and I feel sure if this had been the prevailing opinion out here, as to the best course to take, many more lives would have been saved. He declares: " There is only one logical treatment of the disease, namely, the excision of the diseased organ, as soon as the diagnosis is made " and he adds that he is " too timid to take the responsibility of the risk that there always is, of delaying to evacuate an internal abscess." His reasons he gives as follows:

1. Appendicitis is an inflammation of

of a useless organ, dangerously situated.

2. At the beginning of the attack it is not possible to determine whether it will prove of the harmless or of the dangerous kind.

3. The diagnosis is easy in comparison with the task of diagnosticating the seat of any acute inflammation.

4. At the beginning of an attack the excision of the appendix is an easy and a perfectly safe operation.

5. If so treated, all complications and all subsequent attacks are avoided.

6. In view of the results already obtained by following this treatment, "No other treatment is worthy of consideration."

There

There were many advocates at this time, in America chiefly, for early operation, but in Great Britain there was a very great tendency in rather the opposite direction. This position has continued, and great have been the discussions on the subject. As Dr. Rushmore has remarked (1895) " The treatment of appendicitis by early operative interference, appears to be passing through the same stages that have marked the progress of almost every important change proposed in the management of either medical or surgical diseases. Ridicule, sober judgment based on experience, and adoption or rejection, constitutes these three stages." To this Mr. Mayo Robson adds: " The first

is

is passed and we are well advanced in the second, probably the ultimate issue will be found in a middle course between the American and English methods, for while English surgeons may often be rather too conservative, some Americans advocate early operative interference in every case."

To my mind the conservative methods of English surgeons have wrought more harm in tending to keep this disease chiefly within the province of medicine i.e. as far as they have influenced the minds of the great majority of medical men at Home and in the British Colonies, whereas, the great bulk of the profession in America have long since regarded it as a purely surgical disease

disease in which medical (palliative) treatment is only just tolerated.

As proving the effect of this conservative teaching on the minds of medical men in this Town alone, I will show very clearly that the profession out here have tended to regard the disease more as a medical than as a surgical affection, and it required the operation on His Majesty King Edward (June 1902) when appendicitis was the sole topic of conversation and the daily papers were full of it, to rouse the profession from its lethargy in dealing with this disease. During the five years previous to this date, there were only 37 operations for appendicitis in Johannesburg, the

the greatest number in any one year being 11, which was the number in the year just preceding (Oct. 1901 - 1902) in the following five years, there were 223.

All operations were performed in the Johannesburg Hospital with very rare exceptions until private Homes were started, and then most private patients were sent to these Homes. There may have been a few stray cases in other quarters but probably only 3 or 4 at the most.

During the actual War period extending over some two years there were only 8 cases sent in for operation; in the two years previous to the War, there were 18 cases, and as stated before, in the year

year subsequent to the War, there were 11, allowing of course for the increased population after this date, the increase in the number of cases is quite out of proportion to the increase in population.

As I have gone to some trouble in collecting notes of all these cases from the different Hospital records, I am able to present a fair picture of the surgical aspect of the disease in the town of Johannesburg during the past 10 years.

The Following tables showing some 260 cases operated upon by different practitioners in this town are of considerable interest.

Table 1.

SEX AND AGE FACTOR

Age	-20	-30	-40	40-	Total
Males	36	94	48	19	197
Females	24	23	14	2	63
Total	59	117	62	21	260 cases

The preceding table(1) shows that as in other countries, appendicitis is far more frequent in the male than in the female sex, the ratio being about the same as usual 1-3 or 1-4.

It will also be seen that it occurs more frequently between the ages of 20 and 30, and this is more marked in the male sex. It also shows that it is just as frequent up to the age of 20 as it is between the ages of 30 and 40. After the age of 40 it becomes very much less frequent.

Table 2.

Cases operated upon in Johannesburg during past ten years
October 1897 to October 1907.

	Johannesburg Hospital		Lady Dudley Home	Kensington Sanatorium	Total
1897-98	8				
1898-99	10				
War Period (1899-00	4				
(1900-01	4	37			37
1901-02	11				
1902-03	29		1		30
1903-04	36		1		37
1904-05	32	168	5	1	38
1905-06	35		5	9	49
1906-07	36		20	13	69
					260 cases

The preceding Table (2) shows a great and progressive increase in the number of cases since 1902 and particularly during the past year. This I would attribute in a great measure to the more accurate diagnosis of these cases and to a clearer recognition of the value of surgical interference.

Table 3.

MORTALITY FOR EACH HOSPITAL FOR JOHANNESBURG.

All cases	Johannesburg Hospital	Lady Dudley Home	Kensington Sanatorium	Total
October 97-02	(37 cases (9 deaths -24.32%	Nil	Nil	
October 02-07	(168 cases (31 deaths - 18.7%	(32 (1 death - 3%	(23 (2 deaths -8.7%	
Death Rate (10) (years)	(205 cases (40 deaths - 19.5%	(32 cases (1 death - 3%	(23 cases (2 deaths - 8.7%	(260 cases (43 deaths - 16.5 %

TABLE 3. It will be seen that the death rate in Johannesburg for all operations for appendicitis during the past ten years - is 16.5%. The Johannesburg Hospital shows a very high mortality 19.5% - The Homes 3% and 8.7%, which is a very creditable record; and is no doubt accounted for by the fact that here there are a better class of patients who have received more prompt attention.

Table 4.

(1) Acute Attack (disease limited to appendix).	Johannesburg Hospital	Lady Dudley Home	Kensington Sanatorium	Total
	(7 cases (deaths nil	(9 cases (deaths nil	(5 cases (deaths Nil	23 cases Nil
(2) Quiescent Stage.	(109 cases (7 deaths - 6.4%	(18 cases (Nil	(14 cases (Nil	(141 cases (7 deaths - 5%
(3) Abscess Cases.	(78 cases (24 deaths - 31.6 %	(4 cases (1 death - 25%	(4 cases (2 deaths - 50%	(86 cases (27 deaths - 32%
(4) General Peritonitis.	(11 cases (9 deaths - 81.8%	(1 case (NO deaths	Nil	(12 cases (9 deaths - 75%

TABLE 4 . The preceding table (4) shows 21 acute cases operated upon within about the first 48 hours from onset of symptoms without a death - there were relatively few cases in the Johannesburg Hospital - most cases in this hospital are free patients and have generally been sent there only after graver symptoms make their appearance. In the Lady Dudley Home and Kensington Sanatorium the proportion of such cases is very much higher for they are supplied by some of the best practitioners in Town who are alive to the dangers of delay. It will be noticed in these two Homes there were only two abscess cases.

The death rate in abscess cases (3) is

is enormous (32%) compared with cases (1) and (2) and of course in general peritonitis it is highest of all (75%). It will be noticed that the death rate in the Johannesburg Hospital in the quiescent stage is 6.4% a very high mortality for such cases; here in most cases there were prolonged dissections through dense adhesions, in some cases by unskilful operators.

Of the 37 cases in Johannesburg Hospital during the first five years 16 or 43% were suppurating cases. Of the 168 cases occurring in the second five years - 73 or 43% were suppurating cases - thus showing that the ratio has remained the same. Of the 32 cases occurring in the Lady Dudley

Home

Home - only 5 or 15.6% were suppurating cases. Of the 23 cases occurring in the Kensington Sanatorium only 4 or 17% were suppurating cases. It will be further noticed that of the 260 cases operated upon in Johannesburg 141 or 54% were performed in the quiescent stage with a mortality of 5% all of these deaths occurring in the Johannesburg Hospital. Of the remainder 98 or 37.7% were operated upon during an actual attack after suppuration had occurred with a mortality of 36.7%. The balance 21 cases, were operated upon before suppuration had occurred, without a single death. In some of these cases suppuration had occurred inside the appendix but there was no perforation and in every

case

case the abdomen was completely closed without drainage.

In the B.M.J. November 10th 1906, there appears an article by H.W.Carson, Hon. Surgeon Tottenham Hospital, entitled "One Hundred Consecutive Cases Of Appendix Operation" in which the writer gives an account of 8 acute cases operated upon without a death and he further quotes : Waterhouse, who operated upon 19 cases within 24 hours of the onset without a death and also, Dr. Ochsner, of the Augustina Hospital, Chicago, who reported 55 cases without a death.

Of Dr. Carsons' 62 suppurating cases there were 16 deaths or 26%. Of 30 cases operated upon during quiescent stage there was

1 death

1 death or 3.3%.

Arthur G. Burgess, already quoted, gives an account of 47 cases. Six of these were operated upon in the early stage without a death. Of the remaining 41 suppurating cases there were 4 deaths or 9.8%. He concludes as I do that for a disease which in its early stages is a purely local infection, appendicitis has yet far too high a mortality.

Early removal of the affected appendix is the only means we have of reducing the mortality to a minimum, and will I am convinced ultimately become the generally adopted rule of practice.

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